

1. Because the denominators of $\frac{3}{8}$ and $\frac{7}{8}$ are the same number, we say that they have a _____ denominator.
5. To add (or subtract) fractions that have the same denominator, add (or subtract) their _____ and write the sum (or difference) over the _____ denominator. _____ the result, if possible.
13. The *denominators* of three fractions have their prime-factored form shown below. Fill in the blanks to find the LCD for the fractions.

$$\begin{array}{l} 20 = 2 \cdot 2 \cdot 5 \\ 30 = 2 \cdot 3 \cdot 5 \\ 90 = 2 \cdot 3 \cdot 5 \end{array} \left| \text{LCD} = \underline{\quad} \cdot \underline{\quad} \cdot \underline{\quad} \cdot \underline{\quad} \cdot \underline{\quad} = \underline{\quad} \right.$$

In 17 - 55 odd, evaluate each expression by performing the indicated operation. Reduce at the end if necessary.

17. $\frac{4}{9} + \frac{1}{9}$

29. $\frac{19}{40} - \frac{3}{40} - \frac{1}{40}$

19. $\frac{3}{8} + \frac{1}{8}$

31. $\frac{13}{33} + \frac{1}{33} + \frac{7}{33}$

21. $\frac{11}{15} - \frac{7}{15}$

33. $\frac{1}{3} + \frac{1}{7}$

23. $\frac{11}{20} - \frac{3}{20}$

35. $\frac{2}{5} + \frac{1}{2}$

25. $-\frac{11}{5} - \left(-\frac{8}{5}\right)$

37. $\frac{4}{5} - \frac{3}{4}$

27. $-\frac{7}{21} - \left(-\frac{2}{21}\right)$

39. $\frac{3}{4} - \frac{2}{7}$

41. $\frac{11}{12} - \frac{2}{3}$

49. $\frac{1}{6} + \frac{5}{8}$

43. $\frac{9}{14} - \frac{1}{7}$

51. $\frac{4}{9} + \frac{5}{12}$

45. $-2 + \frac{5}{9}$

53. $\frac{9}{10} - \frac{3}{14}$

47. $-3 + \frac{9}{4}$

55. $\frac{11}{12} - \frac{7}{15}$

In 57 - 63 odd, determine which fraction is larger.

17. $\frac{3}{8}$ or $\frac{5}{16}$

21. $\frac{7}{9}$ or $\frac{11}{12}$

19. $\frac{4}{5}$ or $\frac{2}{3}$

23. $\frac{23}{20}$ or $\frac{7}{6}$

In 65 - 95 odd, evaluate each expression by performing the indicated operation. Reduce at the end if necessary.

17. $\frac{1}{6} + \frac{5}{18} + \frac{2}{9}$

23. $\frac{4}{5} + \frac{2}{3}$

19. $\frac{4}{15} + \frac{2}{3} + \frac{1}{6}$

25. $\frac{12}{25} - \frac{1}{25} - \frac{1}{25}$

21. $-\frac{1}{12} - \left(-\frac{5}{12}\right)$

27. $-\frac{7}{20} - \frac{1}{5}$

29. $-\frac{7}{16} + \frac{1}{4}$

39. $\frac{13}{20} - \frac{1}{5}$

31. $\frac{11}{12} - \frac{2}{3}$

41. $\frac{37}{103} - \frac{17}{103}$

33. $\frac{2}{3} + \frac{4}{5} + \frac{5}{6}$

43. $-\frac{3}{4} - 5$

35. $\frac{9}{20} - \frac{1}{30}$

45. $\frac{4}{27} + \frac{1}{6}$

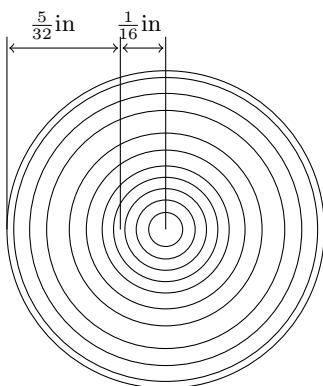
37. $\frac{27}{50} + \frac{5}{16}$

47. $\frac{7}{30} - \frac{19}{75}$

101. BOTANY To determine the effects of smog on tree development, a scientist cut down a pine tree and measured the width of the growth rings for the last two years.

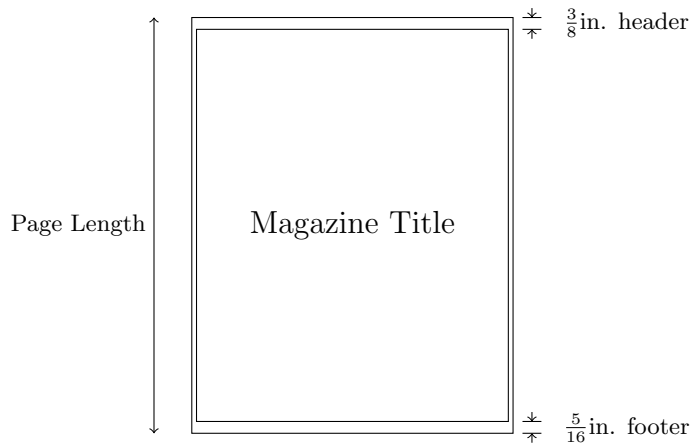
a. What was the growth of this two-year period?

b. What is the difference in the widths of the two rings?



102. GARAGE DOOR OPENERS What is the difference in strength between a $\frac{1}{3}$ -hp and a $\frac{1}{2}$ -hp garage door opener?

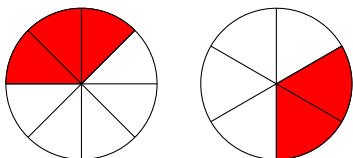
103. MAGAZINE COVERS The page design for the magazine cover shown below includes a blank strip at the top, called a *header*, and a blank strip at the bottom of the page, called a *footer*. How much page length is lost because of the header and footer?



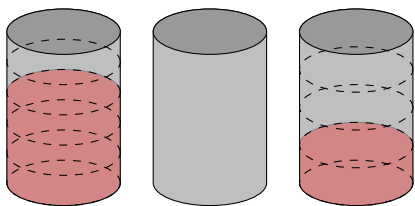
104. DELIVERY TRUCKS A truck can safely carry a one-ton load. Should it be used to deliver one-half ton of sand, one-third ton of gravel, and one-fifth ton of cement in one trip to a job site?

105. DINNERS A family bough two large pizzas for dinner. Some pieces of each pizza were not eaten, as shown.

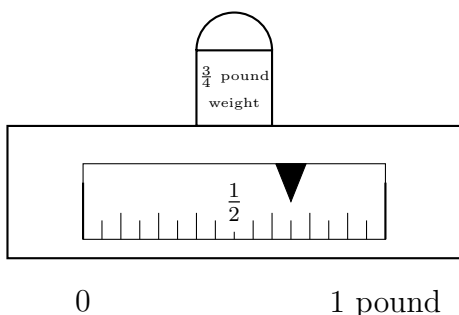
- a. What fraction of the first pizza was not eaten?
- b. What fraction of the second pizza was not eaten?
- c. What fraction of a pizza was left?
- d. Could the family have been fed with just one pizza?



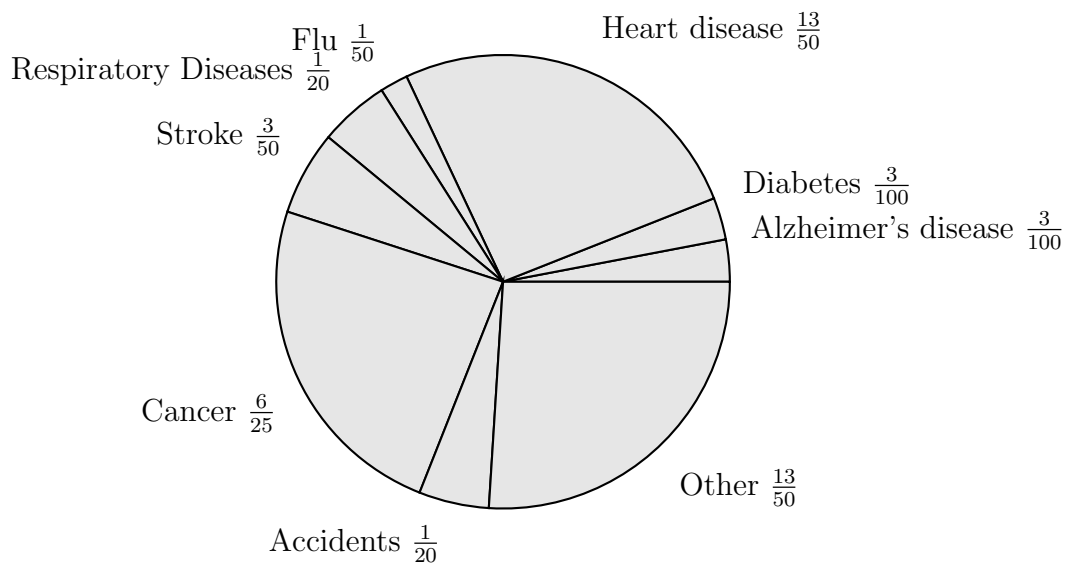
106. GASOLINE BARRELS Three identical-sized barrels are shown below. If their contents of the two of the barrels are poured into the empty third barrel, what fraction of the third barrel will be fill?



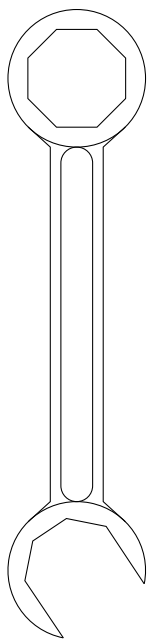
107. WEIGHTS AND MEASURES A consumer protection agency determines the accuracy of butcher shop scales by placing a known three-quarter-pound weight on the scale and then comparing that to the scale's readout. According to the illustration, by how much is this scale off? Does it result in undercharging or overcharging customers on their meat purchases?



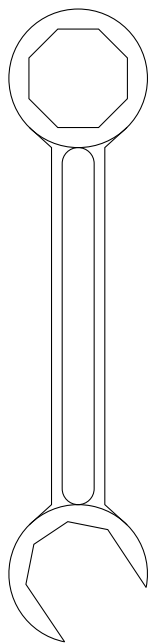
110. HEALTH STATISTICS The circle graph below shows the leading causes of death in the United States for 2006. For example, $\frac{13}{50}$ of all of the deaths that year were caused by heart disease. What fraction of all the deaths were caused by heart disease, cancer, or stroke, combined?



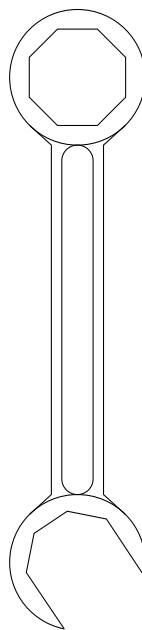
112. TOOLS A mechanic likes to hang his wrenches above his tool bench in order of narrowest to widest. What is the proper order of the wrenches in the illustration?



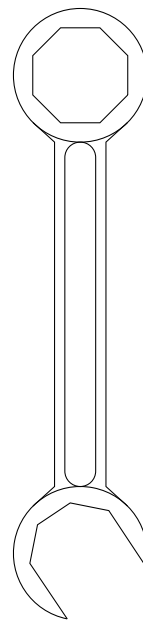
$\frac{1}{4}$ in.



$\frac{3}{8}$ in.



$\frac{3}{16}$ in.



$\frac{5}{32}$ in.